CLAIMS

1. A specimen holder which comprises a container providing a surface on which a tissue specimen is disposed, a window in said container presenting at least part of said surface through which an optical beam propagates for imaging a section of the specimen or a surface of the specimen, a compliant bag attached opposite to the surface on which the specimen is disposed, an immersion medium having an index of refraction matched to the index of refraction of the specimen in said tray encompassing the specimen, and a coupling medium in said bag.

2. The apparatus according to Claim 1 wherein the index of refraction of the coupling medium is the same as the index of refraction of the immersion liquid.

3. The apparatus according to Claim 1 further comprising an imaging system including an objective lens which focuses an optical beam in the section of the specimen to be imaged, the compliant bag being disposed in physically coupled relationship with the lens.

4. The apparatus according to Claim 3 comprising a support in which the holder is disposed, a fixture connecting the support to the objective lens, and means for varying the positional relationship of the support and the holder therein with respect to the objective lens.

5. The apparatus according to Claim 4 wherein said objective lens is fixed and said means for moving said means for said support is operative to move it in directions along an optical axis of the lens and in directions mutually perpendicular to each other and to the optical axis.

6. The apparatus according to Claim 3 further comprising a transparent stabilization plate attached to the bag opposite to the window and means for releasably assembling the plate and the lens.

7. The apparatus according to Claim 1 wherein said container, including said immersion liquid and said bag, is detachable from said objective lens and removable from said support for disposal after imaging of the specimen.

8. The apparatus according to Claim 1 wherein the container has an openable port through which a liquid medium flows either for the container into the bag or from the bag into the contained to provide the immersion medium and the coupling medium.

9. An apparatus for imaging excised tissue having a refractive index comprising:

a tray upon which excised tissue is disposed; and

optics directed towards the excised tissue through a portion of said tray in which said tray contains an immersion media having a refractive index matching the refractive index of said excised tissue.

10. The apparatus according to Claim 9 further comprising means disposed between said tray and said optics which presents a medium between said tray and said optics optically coupling said optics to said tray.

11. The apparatus according to Claim 9 further comprising indicia applied to said tray for identification of said excised tissue disposed therein.

12. A system for imaging a tissue specimen comprising:

a holder having a base with a window upon which a tissue specimen is capable of being located;

means for imaging said tissue specimen through said window when said tissue specimen is located on said window; and

a bag optically transparent to said imaging means which is located between said base of said holder and said imaging means and capable of containing a fluid.

13. The system according to Claim 12 wherein fluid represents a first fluid, and said system holder defines a container including said base for retaining a second fluid.

14. The system according to Claim 13 wherein said second fluid is selected to substantially correct for optical distortion due to the surface texture of the tissue specimen.

15. The system according to Claim 13 wherein said the first and second fluids have indexes of refraction which substantially match.

16. The system according to Claim 12 wherein said imaging means has an objective lens which focuses an illumination beam through window and said bag to the tissue specimen, in which return light to said imaging means represents a section of said tissue specimen.

17. The system according to Claim 16 wherein said bag has a surface adjacent said window of said base and a transparent plate opposite said surface facing said objective lens of said imaging means.

18. The system according to Claim 12 wherein said imaging means has a barrel having an objective lens directed toward the tissue specimen, and said system further comprises means for coupling said bag to said barrel of said imaging means.

19. The system according to Claim 12 wherein said imaging means is a confocal microscope.

20. The system according to Claim 12 wherein said imaging means is operative by one of optical coherence tomography and two-photon microscopy.